website : http://www.LGEservice.com
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WASHING MACHINE
SERVICE MANUAL

CAUTION

READ THIS MANUAL CAREFULLY TO DIAGNOSE TROUBLE CORRECTLY BEFORE OFFERING SERVICE.

MODEL : WD-6590F(H)B
WD(M)-8090F(H)B
WD-1098FHB
WD(M)-1090(5)F(H)B
WD(M)-1190(5)F(H)B
WD(M)-1290(5)F(H)B
WD(M)-1390(5)F(H)B

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1. SPECIFICATION

ITEM		WD-6590F(H)B, WD(M)-8090F(H)B, WD-1098FHB, WD(M)-1090(5)F(H)B, WD(M)-1190(5)F(H)B, WD(M)-1290(5)F(H)B, WD(M)-1390(5)F(H)B	
POWER SUPPLY		220-240V~, 50Hz	
PRODUCT WEIGHT		63kg	
ELECTRICITY CONSUMPTION	WASHING	150W	
	SPIN (800rpm)	300W	
	DRAIN MOTOR	32W	
	WASH HEATER	2000W	
REVOLUTION SPEED	WASH	45rpm	
	SPIN	WD-6590F(H)B	400/500/650 rpm
		WD(M)-8090F(H)B	400/600/800 rpm
		WD-1098FHB, WD(M)-1090(5)F(H)B	400/600/800/1000 rpm
		WD(M)-1190(5)F(H)B	400/600/800/1100 rpm
		WD(M)-1290(5)F(H)B	400/800/1000/1200 rpm
		WD(M)-1390(5)F(H)B	400/800/1100/1300 rpm
OPERATION WATER PRESSURE		0.3-10kgf/cm^2 (30-1000kPa)	
CONTROL TYPE		Electronic	
WASH CAPACITY		7.0kg	
		Synthetic (4.0kg), Delicate (3.0kg)	
		Wool (2.0kg), Hand Wash(2.0kg), Quick(2.0kg)	
DIMENSION		600mm(W) × 600mm(D) × 850mm(H)	
WASH PROGRAM		Cotton, Synthetic, Delicate, Wool, Hand Wash, Quick 30, Rinse+Spin	
OP		Wrinkle Free, Bio, Rinse +, Eco, Pre-Wash, Rinse Hold, Rapid	
DOOR SWITCH TYPE		Bi-Metal type	
WATER LEVEL		9 steps (by sensor)	
RESERVATION		From 3 hours to 19 hours	
SENSING OF THE LAUNDRY AMOUNT		Adopted	
FUZZY LOGIC		Adopted	
DISPLAY OF THE REMAINING TIME		Adopted	
ERROR DIAGNOSIS		10 items	
POWER AUTO OFF		Adopted	
CHILD LOCK		Adopted	
AUTO RESTART		Adopted	

2. FEATURES & TECHNICAL EXPLANATION

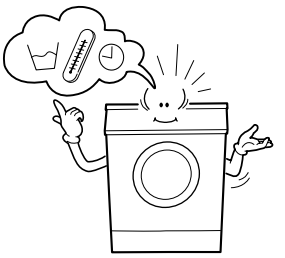
2-1.FEATURES

■ Jumbo drum

LG's jumbo drum can wash about 40% more per load than conventional washing machine. A bigger drum improves the wash performance.

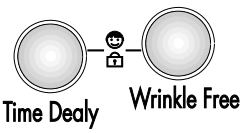
■ Protection against wrinkles

With the alternate rotation of the drum, wrinkling in the laundry is minimized.



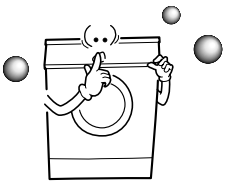
■ More economical by Fuzzy Logic System

FUZZY Logic System detects the amount of load and water temperature, and then determines the optimum water level and washing time to minimize energy and water consumption.



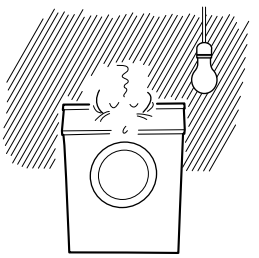
■ Child-Lock

The Child-Lock system has been developed to prevent children from pressing any button to change the programme during operation.



■ Low noise speed control system

By sensing the amount of load and balance, automatical distributes load evenly to minimize the spinning noise level.

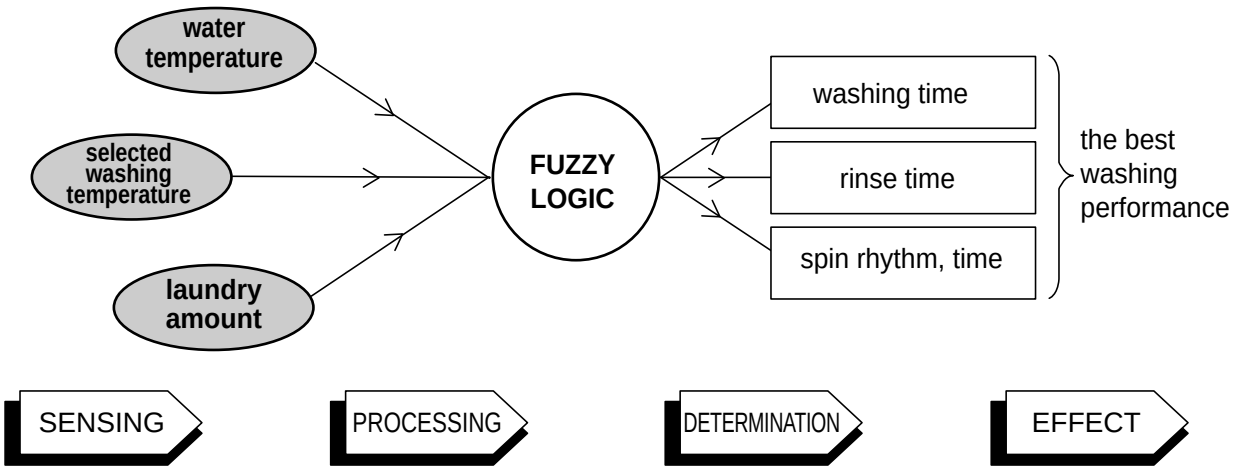


■ Auto Restart

Although the washing machine is turned off by a power failure, it restarts automatically where it stopped when power is supplied again. and it will be the same the machine is unplugged and is plugged in again.

2-2.DETERMINE WASHING TIME BY FUZZY LOGIC

To get the best washing performance optimal time is determined by sensing of water temperature, selected washing temperature and laundry amount.



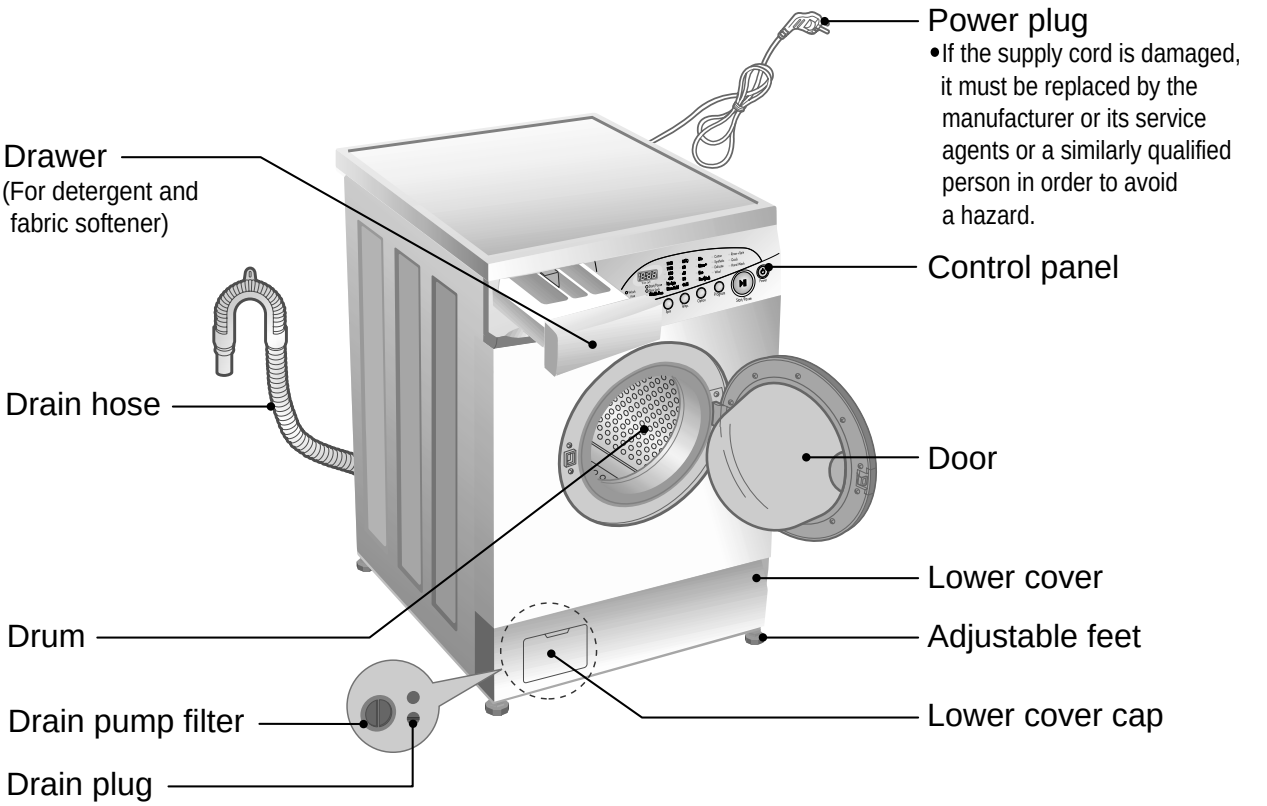
2-3.WATER LEVEL CONTROL

- This model adopts a pressure sensor which can sense the water level in the tub.
- When the water level reaches to the preset level the water supply is stopped, then the washing program proceeds.
- Spinning does not proceed until the water in the tub reduces a certain level.

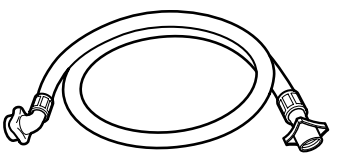
2-4.THE DOOR CAN NOT BE OPENED

- While program is operating.
- While **Door Lock** light turns on.

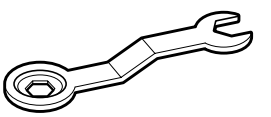
3. PARTS IDENTIFICATION


Power plug
•If the supply cord is damaged, it must be replaced by the manufacturer or its service agents or a similarly qualified person in order to avoid a hazard.
Drawer
(For detergent and fabric softener)
Control panel
Drain hose
Door
Lower cover
Drum
Adjustable feet
Drain pump filter
Lower cover cap
Drain plug

■ACCESSORIES



Hot/Cold (2EA)
Cold (1EA)



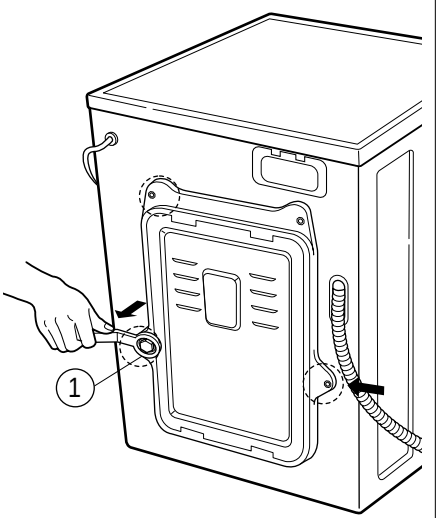
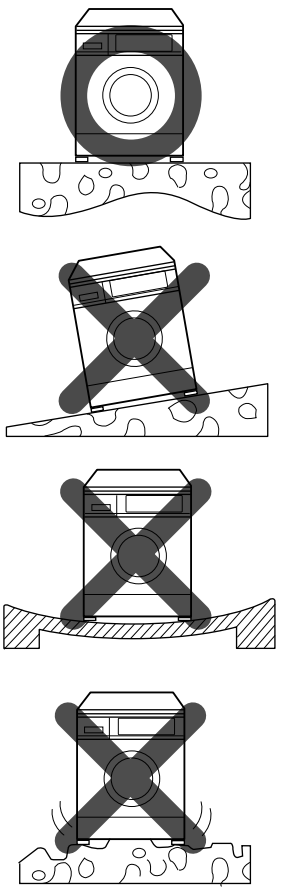
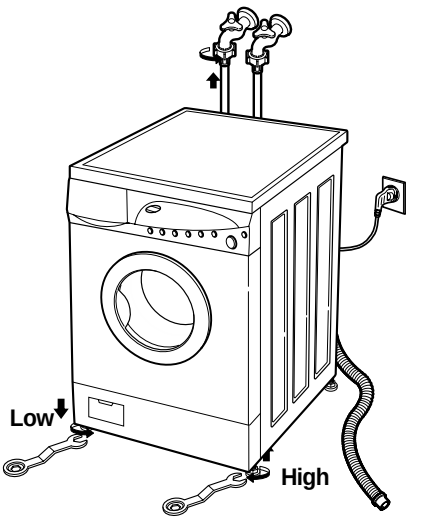
Wrench

4. INSTALLATION

1 Before servicing ask the customer what the trouble is.
2 Check the adjustment (power supply is 220-240V, remove the transit bolts....)
3 Check the troubles referring to the troubleshooting.
4 Decide service steps referring to disassembly instructions.
5 Then, service and repair.
6 After servicing, operate the appliance to see whether it works O·K or NOT.

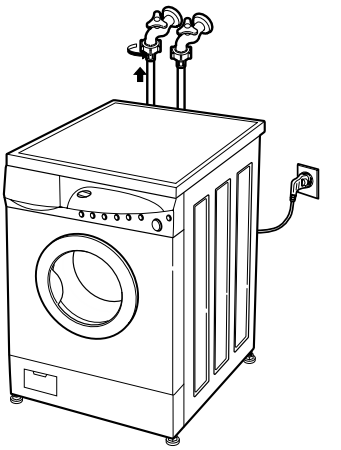
■ STANDARD INSTALLATION

The appliance should be installed as follows.

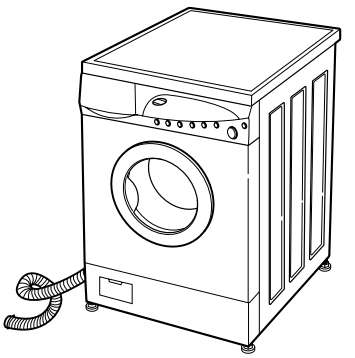
REMOVE THE TRANSIT BOLTS	INSTALL THE APPLIANCE ON FLAT AND FIRM SURFACE	ADJUST THE HORIZONTAL
• Remove the transit bolts (4EA: ①) with supplied wrench. • Keep the transit bolts and wrench for future use. • Insert the 4 caps provided into the hole. 		• Turn the adjustable feet to set the appliance horizontally.  • The appliance goes up by rotating the feet clockwise. • The appliance comes down by rotating the feet counter-clockwise.

■ HOW TO CONNECT INLET HOSE

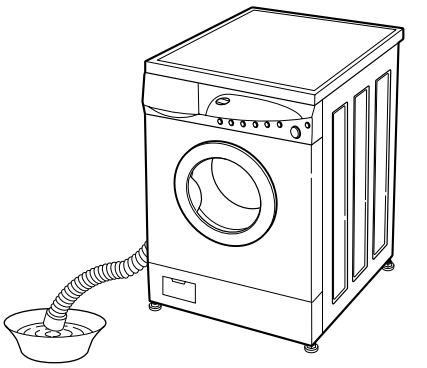
- Check that the rubber washer is inside of the valve connector.
- Connect the inlet hose firmly to prevent leak.



■ CONNECT DRAIN HOSE



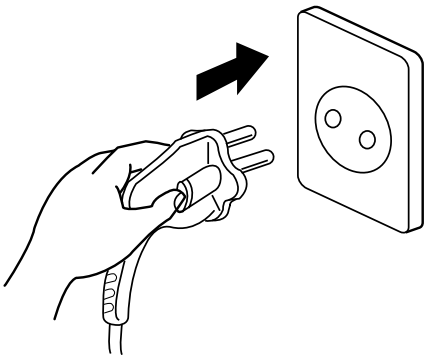
· Make sure that the hose is not twisted.



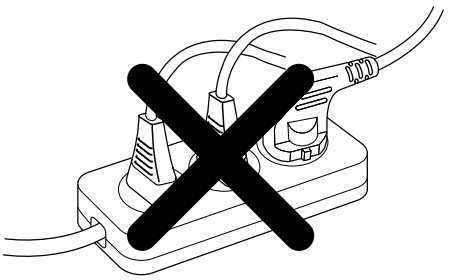
· Avoid submerging the end of the hose.

※ The drain hose should be placed under 100cm from the floor.

■ CONNECT POWER PLUG



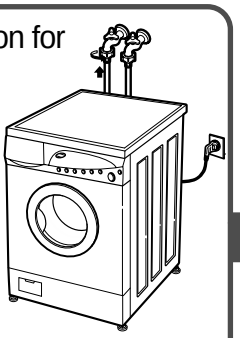
· Connect the power plug to the wall outlet.



· Avoid connecting several electric devices,
It may be the cause of a fire.

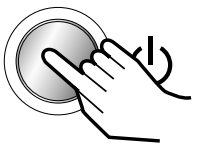
7 TEST OPERATION

1 Preparation for washing.



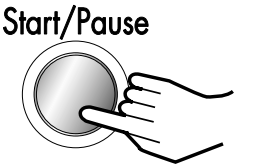
- Connect the power plug to the outlet.
- Connect the inlet hose.

2 Press the power button.

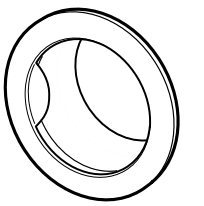


- In case of cotton program.

3 Press the START/PAUSE button.

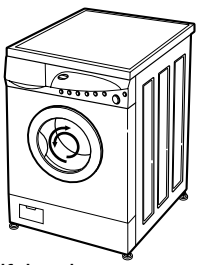


4 Check the water supply.



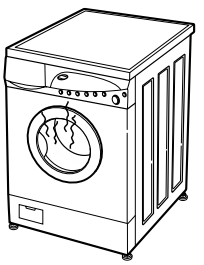
· Check if water is supplied through the detergent dispenser.

5 Check automatic reverse turn.



· Check if the drum rotates clockwise and counterclockwise.

6 Check the water heating.

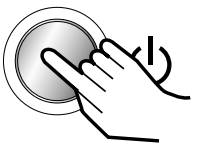


· Press the button 「TEMP」 and the present temperature will be displayed.

7 Check drain and spin

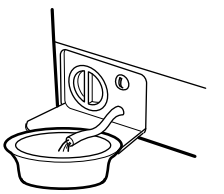
· Turn off **Wash** and **Rinse** after pressing the **Start/Pause** button and start the machine again.
· Check drain and spin.

8 Power off and open the door



· Power off and then power on.
· Check if the door can be opened after **Door Lock** lamp turns off.

9 Water removal



· If SVC is needed during check, remove the remaining water by pulling out the hose cap.

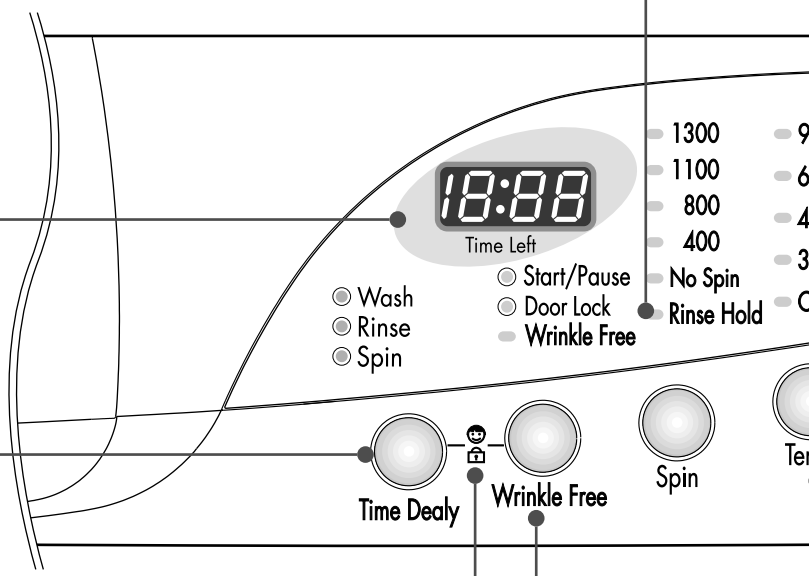
5. OPERATION

LED display

- It displays the remaining time (Hour : Minute) to finish.
- In case of abnormal operation, error indications are displayed.
  (IE, OE, UE, dE, tE, FE, PE, LE, SE, CE)
- See trouble shooting guide.

Rinse hold

- If you desire to leave fabrics in the machine without spinning after rinse to prevent wrinkling, you may select rinse hold by pressing the spin button.
- If you want to drain and spin, when Rinse Hold function is proceed, Press the Start/Pause button to cancel the Rinse Hold function and select spin speed or program. Press the Start/Pause button again to start program.
- If you want to drain only, select the no spin or pump program.
- If lamp turns on, that function has been selected.



Time Delay

- Press the button when delayed washing is needed.
- When the button is pressed, [3:00]is displayed, maximum delay of [19:00] hours can be set.
- Each press advances time delay by the hour.
- Use [Power] button to cancel [Time Delay].
- [Time Delay] means the time required from the present to the completion of washing.

Child - lock

- Child Lock system can be set and canceled by pressing both [Time Delay] and [Wrinkle Free] button simultaneously.
- Once Child Lock is set, all button are inoperable.
- Child Lock system can be set anytime even during Power-off and operation.
- It is automatically cancelled when an operational error occurs.

Wrinkle Free

- If you want to prevent wrinkle, select this button with spin.

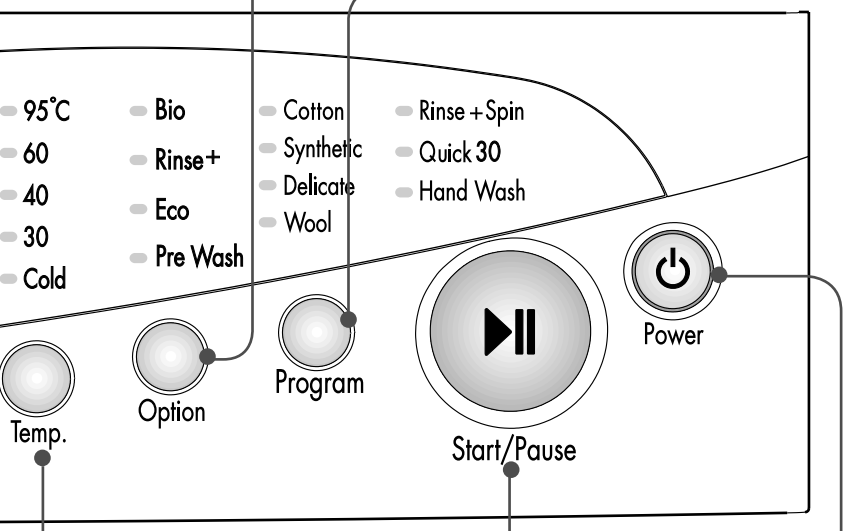
Option

Bio : • If you want to elimenate protein stains(milk, blood, chocolate...), you may select Bio by pressing the option button.[You can select Bio when temperature is higher than 60°C in Cotton and Synthetic.]

Rinse+ : • If you wish to rinse more, the Rinse+ option will remove any trace of detergents.

Eco : • By selecting Eco, the water temperature is reduced and washing time is lengthened. So you can economize in your consumption of energy.[You can select Eco when temperature is higher than 60°C in Cotton and Synthetic.]

Pre Wash : • If the laundry is heavily soiled, "Pre Wash" course is effective.
• Pre Wash is available in Cotton and Synthetic Program.



Wash program selector

- 7 programs can be set depending on the type of the laundry.
- By pressing the button [Cotton → Synthetic → Delicate → Wool → Hand Wash → Quick 30 → Rinse + Spin] can be selected.

Water temperature selector

- Press the button to select water temperature.
- The water temperature [40°C → 60°C → 95°C → Cold→ 30°C] can be selected in Cotton.
- 95°C is selected for Cotton only.
- By pressing the button while operating the washer, the present temperature is displayed.

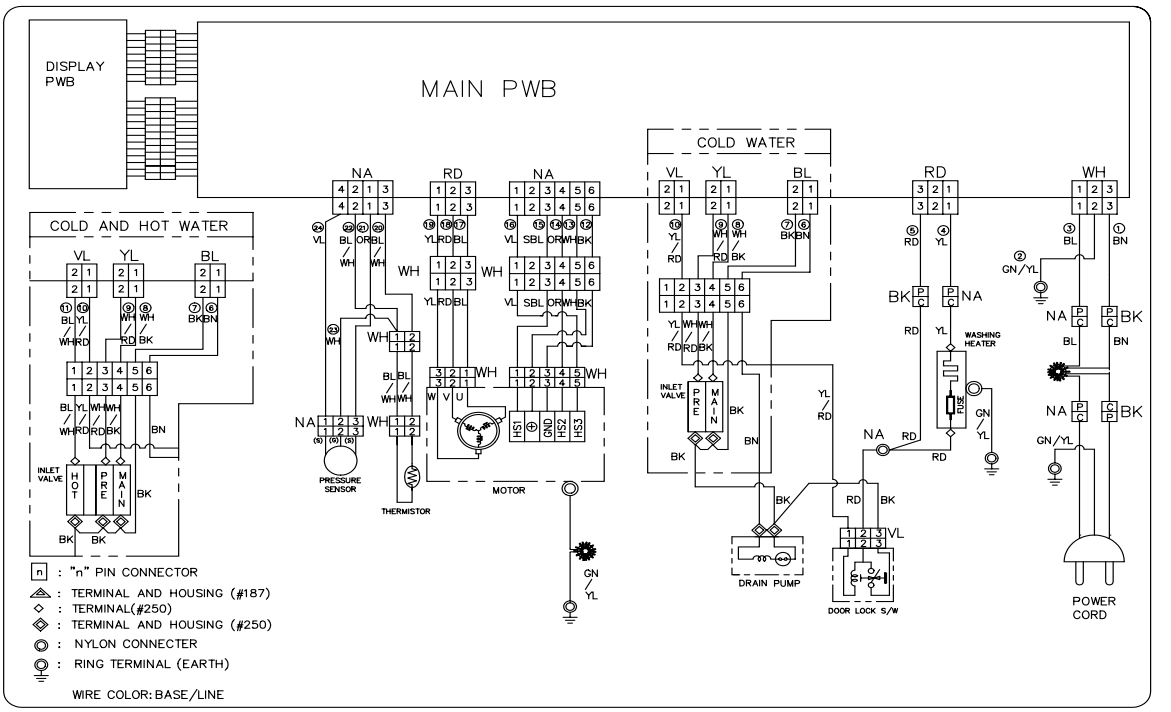
Start/Pause button

- Use the button to start or pause wash cycle.
- The power turns off automatically 4 minutes after the pause button is pressed.

Power button

- Press the button to turn power on and off.
- Press the button to cancel the delay finish.

6. WIRING DIAGRAM / PROGRAM CHART



* Water Supply : WÆS * Intermittent Spin : IÆS * Disentangle : DÆ

COURSE / STEP	Washing										Rinse														Spin			END	AUTOOFF	Normal Working Time (Hour:Minute)
	Pre				Main						Normal												Rinse +									
						Washing		Staycooling			1				2				3				4									
	WÆS	Washing	Drain	IÆS	WÆS	Heating	Washing	WÆS	Rinsing	Drain	Drain	IÆS	WÆS	Rinsing	Drain	IÆS	WÆS	Rinsing	Drain	IÆS	WÆS	Rinsing	Drain	IÆS	WÆS	Rinsing	Drain	Spin	DÆ			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	20	20	
Time (SEC)	120	MIN	60	240	120		MIN	120	60	60	60	240	120	360	60	240	120	360	60	240	120	360	60	240	120	360	60	480	120	20	20	
Cotton		8					22 53																							About 1:55
Synthetic							4 24																							About 1:28
Delicate							4 18																							About 58
Wool							4 18																							About 58
Handwash							24																							About 57
Quick 30																														About 30
Rinse + Spin																														About 19
Spin																														About 11

* ▬▬ Basic Cycle
* ▬▬ Optional Cycle
* Pre-Setting Time : Water Supply - 120 sec.
Drain - 60 sec.
* ~ Time for varies as the temperature or the amount of laundry

* Basic time is minute in washing chart
* The actual program time can be varied with the load amount, water temperature or ambient temperature

❋ Pre Wash : If the laundry is heavily soiled, “Pre Wash” course is effective. Pre Wash is available in Coloureds, Whites and Synthetic Program.

❋ Eco : By selecting Eco function, the water temperature is reduced and washing time is lengthened. So you can economize in your consumption of energy.

❋ Rinse+ : If you wish to rinse more, the Rinse+ function will remove any trace of detergents.

❋ Bio : If you want to elimenate protein stains (milk, blood, chocolate...), you may select Bio function by pressing the option button.

❋ Quick 30 : By selecting this function, you may wash a small quantity of colored laundry which is lightly soiled fast.

❋ You can select Bio function and Eco function when temperature is higher than 60℃ in Whites, Coloureds and Synthetic. If the function is selected, the beginning water temperature can not be changed.

7. TROUBLESHOOTING

7-1.BEFORE PERFORMING SERVICE

■ Be careful of electric shock or disconnecting the parts while trouble shooting.

■ Voltage of each terminal in 220-240V~ and DC while applying an electric current.

7-2.QC TEST MODE.

① Pressing **Wrinkle Free**, and SPIN button simultaneously.

② Power supply ON with pressing upper two button. then buzzer sound twice.

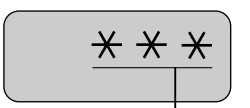
③ Press the START/PAUSE button as follows.

[Press the START/PAUSE button more 4 times until stop spinning]

Pressing number of [START/PAUSE] button	Checking Point	Display Status
None	All lamps turn on	
1 time	Clockwise spin (right)	Motor rpm (About 45)
2 times	Low speed Spin	Motor rpm (About 63~67)
3 times	High speed Spin	Motor rpm (About 79~85) : WD(M)-8090F(H)B
		Motor rpm (About 100~106) : WD(M)-1090(5)F(H)B
		Motor rpm (About 107~103) : WD(M)-1190(5)F(H)B
		Motor rpm (About 114~120) : WD(M)-1290(5)F(H)B
		Motor rpm (About 122~127) : WD(M)-1390(5)F(H)B
4 times	Inlet valve for pre-wash operation	Water level frequency (25~65)
5 times	Inlet valve for main-wash operation	Water level frequency (25~65)
	Hot inlet valve in case of hot water fill	
6 times	Inlet valve for main-wash operation	Water level frequency (25~65)
7 times	Counterclockwise spin (left)	Motor rpm (About 45)
8 times	A Heater is in operation for 3 sec.	Water Temperature
9 times	Draining pump operation	Water level frequency
10 times	Auto off operation	

7-3.HOW TO KNOW THE WATER LEVEL FREQUENCY

✻ Press the **Spin** and **Temp**. button simultaneously.



The digits means water level frequency (10^{-1}kHz)

ex) 241 : Water level frequency = 241×10^{-1}kHz

=24.1kHz

7-4.ERROR DISPLAY.

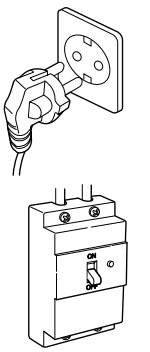
- If you press the [Start/Pause] button any error except PE will disappear and the machine will change into pause status.
- In case of 『PE』, 『tE』, 『dE』, if the error is not resolved within 20 sec. In case of other errors, if the error is not resolved within 4 min. Power will be turned off automatically and the error only will be blinked. But in the case of 『FE』, power will not be turned off.

	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR		○ Water has not reached to the pre-set level within 4 min. since inlet valve operated, or water has not reached to the normal level within 25 min.
2	IMBALANCE ERROR		○ The appliance is tilted. ○ Laundry is gathered to one side. ○ Non distributable things are put into the drum.
3	DRAIN ERROR		○ Water has not drained enough within 5 min.
4	OVERFLOW ERROR		○ Water is automatically being pumped out because too much water is in the tub.
5	SENSOR PRESSURE S/W ERROR		○ The sensor pressure switch is out of order.
6	DOOR OPEN ERROR		○ The [Start/Pause] button is pressed with the door open. ○ The door switch is out of order.
7	HEATING ERROR		○ The thermistor is out of order.
8	SENSOR ERROR		○ The connector (5-pin, male, white) in the wire harness is not connected to the connector (5-pin, female) of hall sensor in the MOTOR. ☞ Reconnect or repair the contact in the connector.

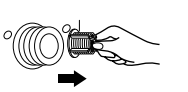
	ERROR	SYMPTOM	CAUSE
8	SENSOR ERROR		• The electric contact between the connectors (5-pin, male in the wire harness and 5-pin, female in the hall sensor) is bad or unstable. ☞Reconnect or repair the contact in the connector • The connector (6-pin, male, natural) in the wire harness is not connected to the connector (6-pin, female, natural) of PWB ASSEMBLY (Main) or the electric contact of connectors is bad/unstable. ☞Reconnect or repair the contact in the connector • The electric contact between the connectors [6-pin, male, in the wire harness and 6-pin, female in the controller (Main)] is bad or unstable. ☞Reconnect or repair the contact in the connector • The Wire Harness between hall sensor in the MOTOR and PWB ASSEMBLY (Main) is cut (open circuited). ☞Repair/replace the damaged WIRE HARNESS • The hall sensor is out of order/defective. ☞Replace the motor • The controller (Main) is out of order/defective. ☞Replace the PWB ASSEMBLY (Main)
9	CURRENT ERROR		• PWB ASSEMBLY (Main) is out of order ☞Replace the PWB ASSEMBLY (Main) • Winding in the MOTOR is short-circuited. ☞Replace the MOTOR
10	LOCK ERROR		• The Connector (3-pin, male, white) in the wire harness is not connected to the Connector (3-pin, female, white) of MOTOR. ☞Reconnect or repair the connector • The electric contact between the connectors [3-pin, male, white in the wire harness and 6-pin, female, white in the PWB ASSEMBLY (Main)] is bad or unstable. ☞Reconnect or repair the contact in the connector • The wire harness between the MOTOR and PWB ASSEMBLY (Main) is cut (open circuited). ☞Repair the damaged (open-circuited) WIRE HARNESS • The hall sensor is out of order/defective. ☞Replace the PWB ASSEMBLY (Main)

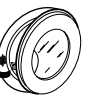
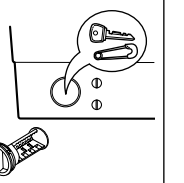
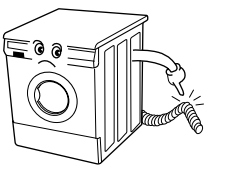
8. ERROR DIAGNOSIS AND CHECK LIST

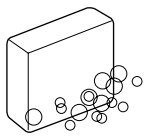
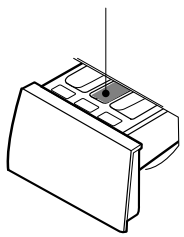
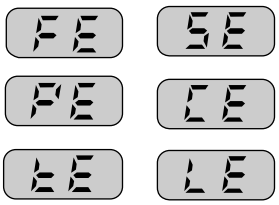
8-1.DIAGNOSIS AND ANSWER FOR ABNORMAL OPERATION

<table>
<tr><th>SYMPTOM</th><th>GUIDE FOR SERVICE CALL</th></tr>
<tr><td>NO POWER</td><td>Is the power plug connected firmly to 220-240V~ outlet?
YES
Power failure? or Breaker opened?
Is the outlet controlled by a switch.
NO
Visit to check
  </td></tr>
<tr><td>Water inlet trouble
 </td><td>Is 1E displayed?

YES
Is the tap opened?
YES
Is the tap frozen?
NO
Is the water supply shut-off?
NO
Is filter in the inlet valve clogged with foreign material?
YES
Clean the filter of inlet valve
NO
Visit to check

  </td></tr>
</table>

SYMPTOM	GUIDE FOR SERVICE CALL
◦ DOOR OPEN ERROR Refer to 7-4 ERROR DISPLAY	Did you press the **Start/Pause** button when the door is open? **YES** → Close the door  **NO** Visit to check **Check if the door switch is O.K**
◦ Drain Trouble 	Is displayed? **YES** Is the debris filter clogged with foreign material such as pins, coins, etc.? **YES** → Clean up the filter.  **NO** Is the drain hose frozen with water, kinked, or crushed?  **NO** Visit to check

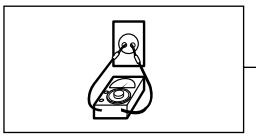
SYMPTOM	GUIDE FOR SERVICE CALL
◦ Suds overflow from the appliance. (In this condition, wash and spin do not operate normally)	Is low-sudsing detergent for the durm washing machine used? **YES** Is the proper amount of detergent used as recommended? **YES** Recommend to reduce the amount of detergent.  LOW SUDSING DETERGENT ✳ This appliance has the automatic suds sensing function which operates under much suds condition for good rinse and preventing overflow. ✳ When much suds are sensed, the suds removing fuction such as drain, water input, and pause will operate without rotating the drum.
◦ No effect of softener	Is softener put in the correct compartment of drawer? **YES** Is the drawer closed during wash? **YES** Is the softener cap clogged? **YES** Explain how to use softener **Clean the compartment for softener** Compartment for softener 
	Visit to check

8-2.FAULT DIAGNOSIS AND TROUBLESHOOTING

CAUTION

1. Be careful of electric shock or disconnecting the parts while troubleshooting.
2. First of all, check the connection of each part terminal with wiring diagram.
3. If you replace the PWB assembly (Main), put in the connectors correctly.

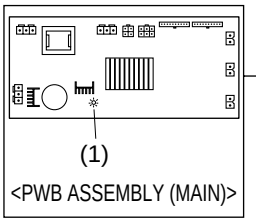
NO POWER



When measuring the voltage of the outlet, is the voltage AC 220-240V?

NO → Check the fuse?

YES

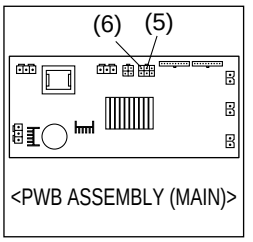


<PWB ASSEMBLY (MAIN)>

Is the LED (1) on?

NO → Replace PWB assembly (Main)

YES



<PWB ASSEMBLY (MAIN)>

When measuring the voltage of natural connector (5,6) is the voltage DC 10~16.5V?

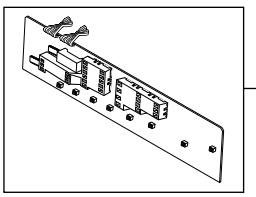
NO → Replace PWB assembly (Main)

YES

Is connector (2) disconnected or disassembled?

YES → Reconnect the PWB assembly (Display)

NO



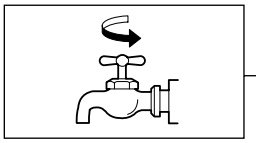
Is wire of the PWB assembly (Display) disconnected?

YES → Reconnect the PWB assembly (Display)

NO

Replace PWB assembly (Display)

NO WATER SUPPLY

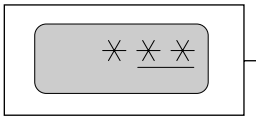


Is the water supply shut-off?

NO

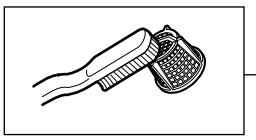
Is the tap opened? **NO** → Open the tap.

YES



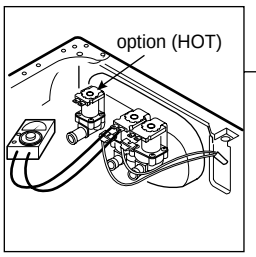
When you press both **Spin** button and **Temp.** buttons simultaneously, is the water level frequency below 240? **YES** → Check the chamber (Air) and the tube clogged with impurity.

NO



Is the inlet valve filter clogged with impurity? **YES** → Clean the filter.

NO

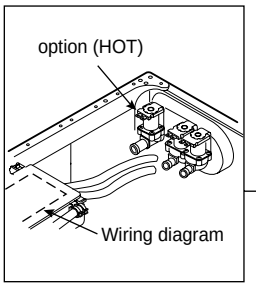


Is resistance of the inlet valve connector between the 2 to 8 kΩ? **NO** → Replace the inlet valve.

YES

Check the voltage between each terminals of inlet Valve is 220 - 240V~.
(Refer to 7-2 TEST MODE) **NO** → Replace PWB assembly (Main)

DETERGENT DOES NOT FLOW IN

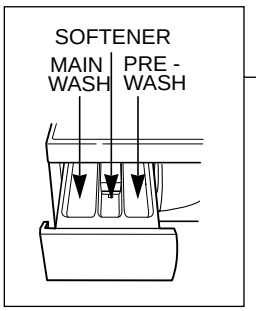


Is water supplied? **NO** → Refer to solution 「NO INLET」

YES

Are replaceptacles correctly connected to the terminals of inlet valve? **NO** → Check the wiring on the dispenser.

YES

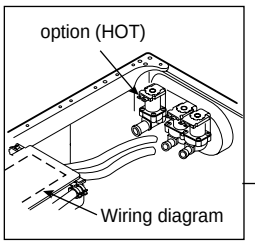


Is detergent put in the correct compartment of the drawer? **NO** → Put the detergent in the correct position
PRE+MAIN
MAIN WASH
● : Detergent

YES

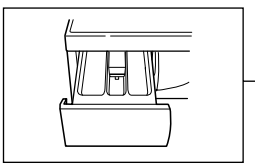
Is the detergent caked or hardened? **YES** → Clean the drawer.

SOFTENER DOES NOT FLOW IN

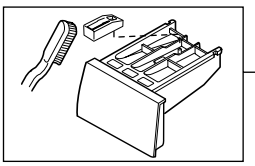


Is water supplied?
- NO → Refer to 「NO WATER SUPPLY」
- YES ↓

Are receptacles correctly connected to the terminals of inlet valve?
- NO → Check the wiring on the dispenser.
- YES ↓

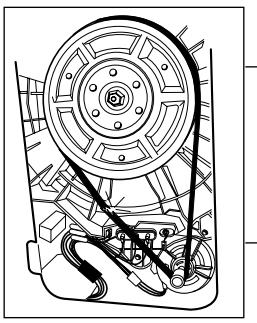


Is softener put in the correct compartment of drawer?
- NO → Put it in the correct compartment.
- YES ↓



Is the softner cap clogged?
- YES → Clean the cap and drawer.

ABNORMAL SOUND

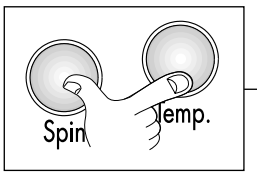


Is the pulley bolt loosened?
- YES → Fix the bolt tightly.
- NO ↓

Is the belt worn?
- YES → Replace the V-belt (4400FR3116A)
- NO ↓

Is there friction noise from the motor?
- YES → Replace the motor.

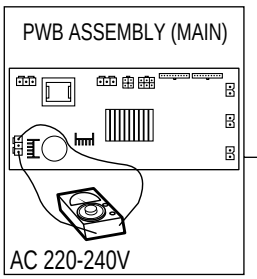
HEATING WITHOUT WATER



When pressing [Spin] and [Temp.] at the same time after draining, is the water level frequency 252 or more?
When pressing [Spin], [Temp.] buttons at the same time while wash, is the water level frequency between 220 - 240?

NO → Replace the sensor (pressure)

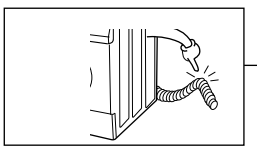
YES



Checking voltage between two pins as press the power button is the voltage 220 - 240V~?

NO → Replace the PWB assembly (Main)

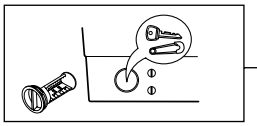
DRAIN MALFUNCTIONING



Is the drain hose twisted or frozen?

YES → Repair drain hose

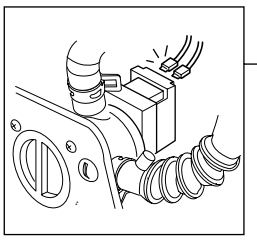
NO



Is the impeller of the drain pump clogged?

YES → Remove foreign material.

NO



Is the connector disconnected, disassembled?

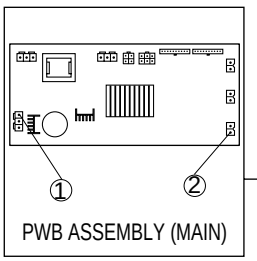
YES → Reconnect or repair the connector

NO

Is the coil of drain pump cut-off?
(resistance of coil is 90~160 Ω)

YES → Replace the pump assembly

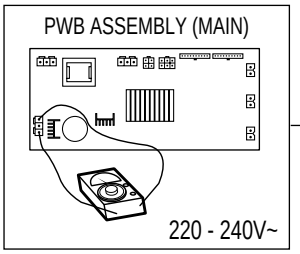
NO



When checking voltage between connectors (①, ②)on spinning, is the voltage 220 - 240V~ as the figure?

NO → Replace the PWB assembly (Main)

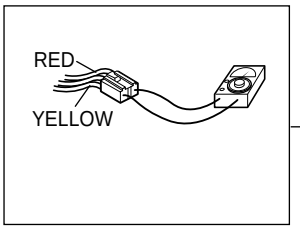
WASH HEATER TROUBLE



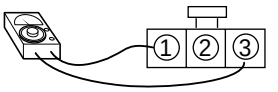
When checking the voltage between connector the PWB assembly (Main)during whites washing ,Is the voltage 220 - 240V ~?

NO → Replace the PWB assembly (Main)

YES

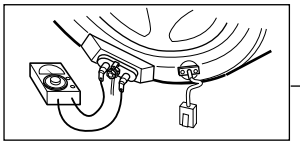


After power off,is the resistance of wire (RED-YELLOW) connectors between 10Ω to 30Ω?



YES → Normal

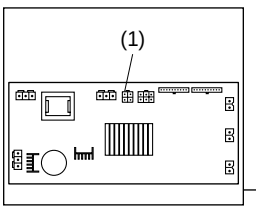
NO



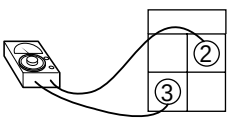
After power off and the heater terminal is disconnected, is the resistance 10 to 30Ω?

NO → Replace the heater assembly

HEATING CONTINUOUSLY ABOVE THE SETTING WATER TEMPERATURE

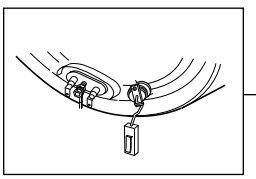


When disconnect the connector (1) on the PWB assembly (Main) is the resistance of the Natural connectors [②(Blue/White), ③(Blue / White)]between 2.5kΩ to 180kΩ (105℃~0℃)?



NO → Replace the thermistor (6322FR2046B)

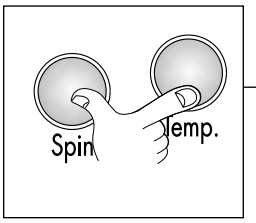
YES



When checking thermistor on the tub, is the thermistor loosened above 2mm from the rubber?

YES → Push the thermistor tightly to the rubber.

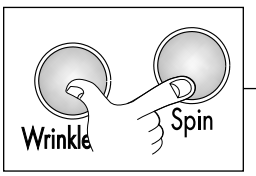
SPIN TROUBLE



Check on the spinning, is the frequency of the water level 248 or more. The frequency can be checked by pressing the **Spin** and **Temp.** buttons at the same time on the program.

NO → Check the sensor (Pressure) or hose (Sensor).
If the problem is on the sensor or the hose, replace the sensor or the hose.

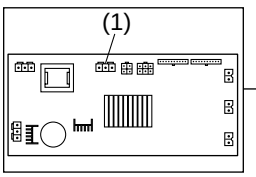
YES



When pressing **Wrinkle Free**, **Spin**, and POWER buttons at the same time after power off, press the START/PAUSE button 2 times, is the drum low speed spin?

YES → Normal

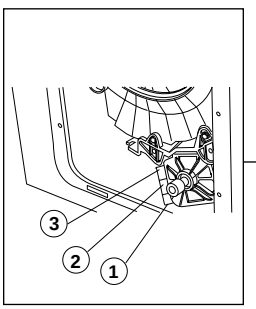
NO



Is it disconnected, or disassembled?
[Red:3pin (1)]

YES → Correct the connector.

NO



Check the motor connector. Is the resistance of the terminal same as the figure?

MOTOR TERMINAL

①	②	③

Resistance of terminal:
①~② / ②~③ / ③~① : About 6.5Ω

NO → Replace the motor assembly.
(4681FR1241C)

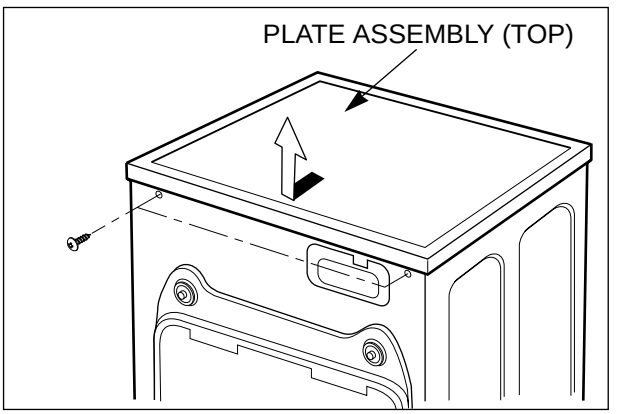
YES

Replace the PWB assembly (Main)

9. DISASSEMBLY INSTRUCTIONS

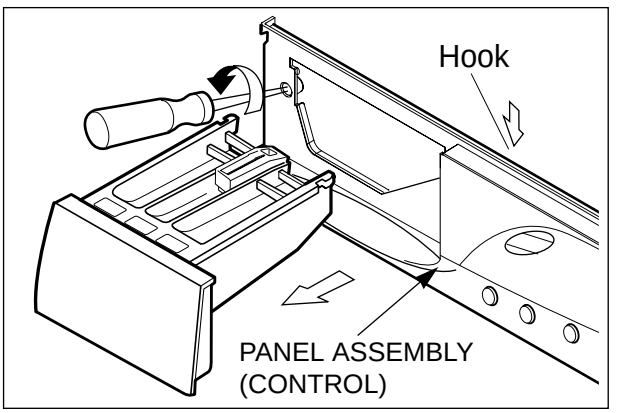
* Be sure to unplug the machine out of the outlet before disassembling and repairing the parts.

CONTROL PANEL



① Unscrew 2 screws on the back of the top plate.

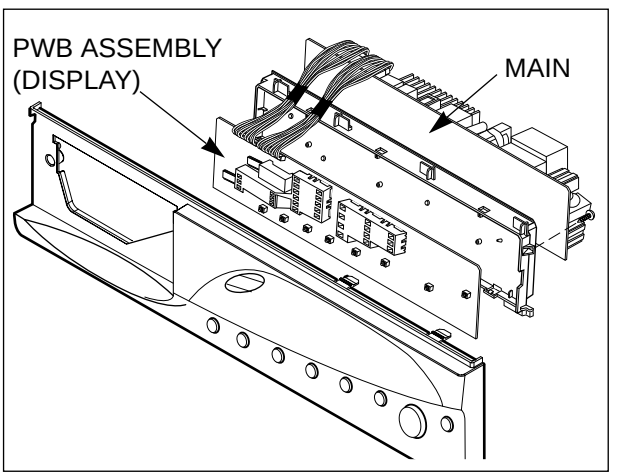
② Pull the top plate backward and upward as shown.



① Disconnect the PWB Assembly connector from Main lead wire Assembly.

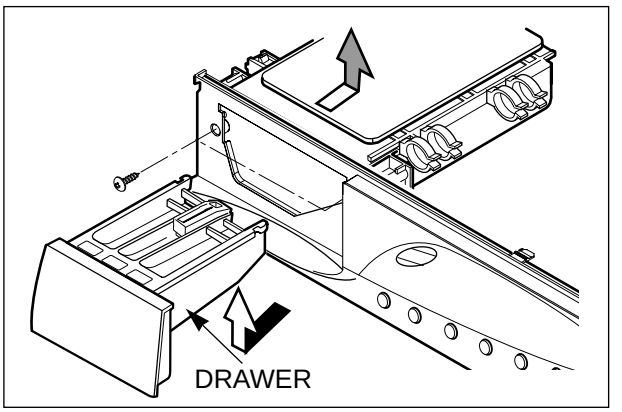
② Pull out the drawer and unscrew 2 screws.

③ Push upper hooks down on the top and pull the control panel.

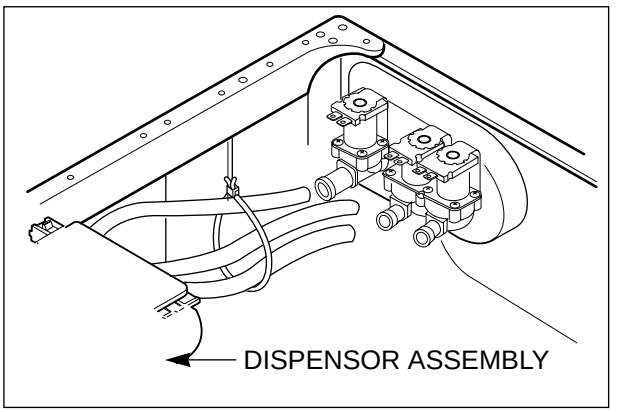


① Disconnect the PWB assembly (Main & Display) from the control panel by pushing 4 hooks down.

DISPENSER ASSEMBLY

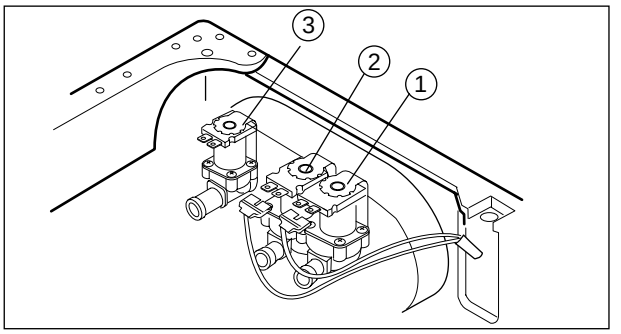


① Disassemble the top plate assembly.
② Pull out the drawer to arrow direction.
③ Unscrew 2 screws.



① The hose clamps and the hose are disassembled.
② The ventilation bellows and the water inlet bellows are disassembled on the tub.

INLET VALVE



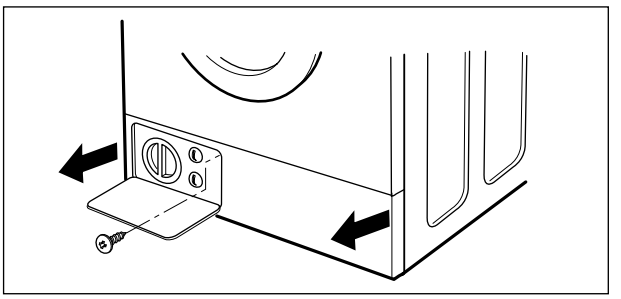
① Disconnect the wiring receptacle.

② Unscrew 2 screws from the back.

※When reconnecting the connector

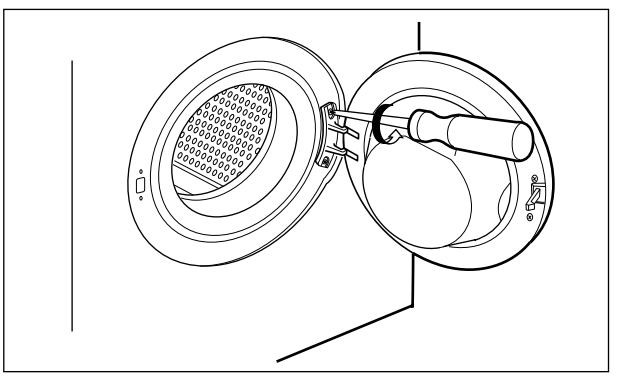
VALVE #1 (MAIN)	Whited/Black-Black
VALVE #2 (PRE)	White/Red - Black
VALVE #3 (HOT)	Blue/White - Black

LOWER COVER



■ Open the lower cover plate by using coin and pull out the lower cover in the arrow direction after a screw is unscrewed.

DOOR

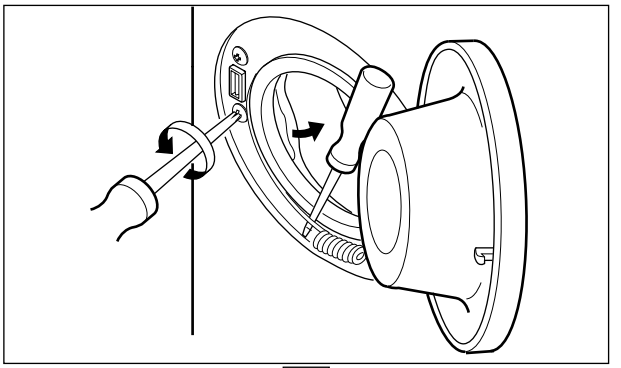


① Open the door completely.

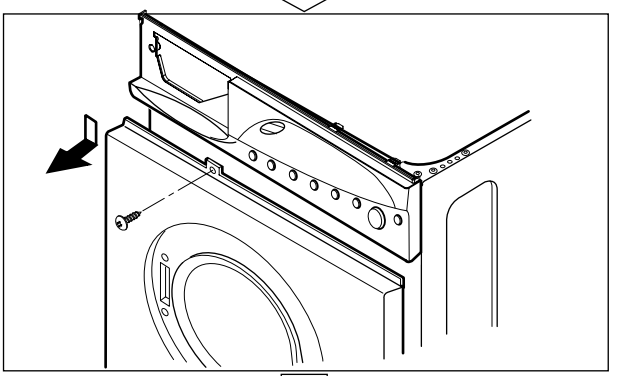
② Remove the two screws from the hinge.

※When removing the door assembly, it is necessary to hold the bracket that is inner of the cabinet cover.

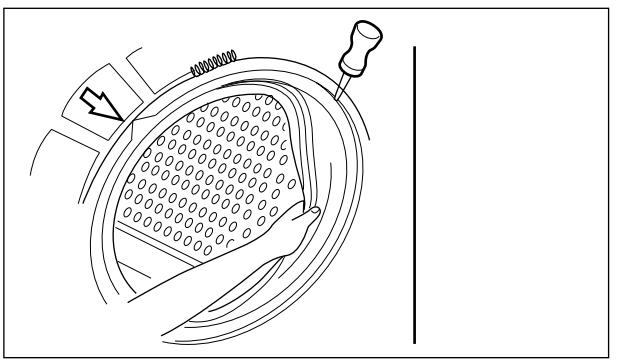
GASKET ASSEMBLY



① Take apart the cabinet gasket clamp.
② Unscrew 2 screws from the cabinet cover.
③ Open the lower cover cap and unscrew 1 screw inside.
④ Take apart the lower cover.

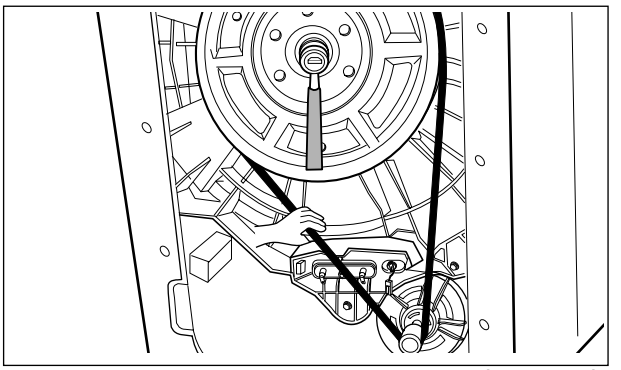


① Unscrew all the screws on the upper and lower sides of the cabinet cover.



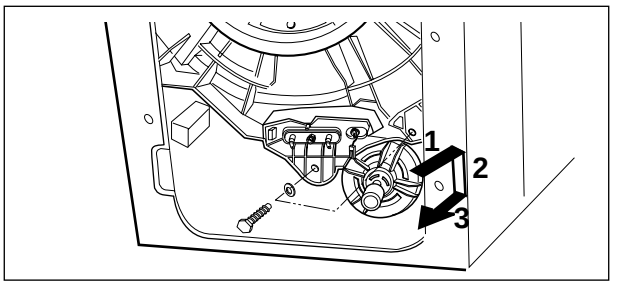
① Take apart the tub gasket clamp.
② Make sure that the drain hole of the gasket is put beneath when reassembling the gasket.
※Refer to the arrow mark on the tub cover.

PULLEY, MOTOR, DAMPER



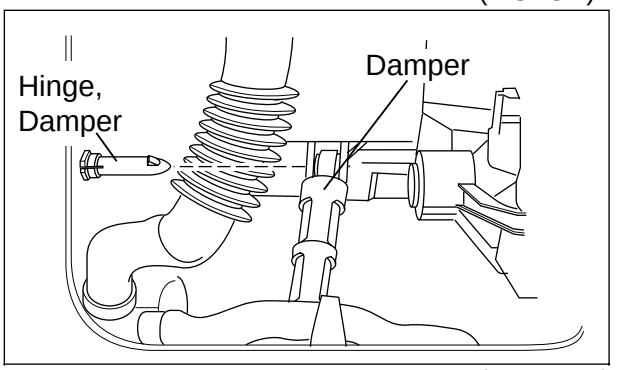
(PULLEY)

① Remove the back cover.
② Take off the belt turning the pulley.
③ Unscrew the bolt to pull out the pulley.



(MOTOR)

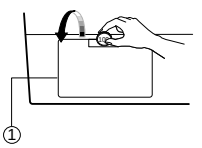
① Unscrew 2 screws from the bracket.
② Push the motor in the arrow direction for disassembling.
③ When reassembling the motor, make sure that motor mounting bushings are not taken off from the bracket.



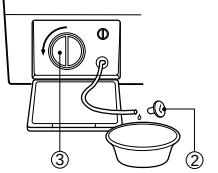
(DAMPER)

① Pull out the hinge, pressing its snap.
② Do not use the pulled out hinge again. It may be taken off during operation.

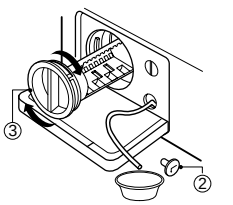
Clean the drain pump filter



Open the lower cover cap (①) by using coin.

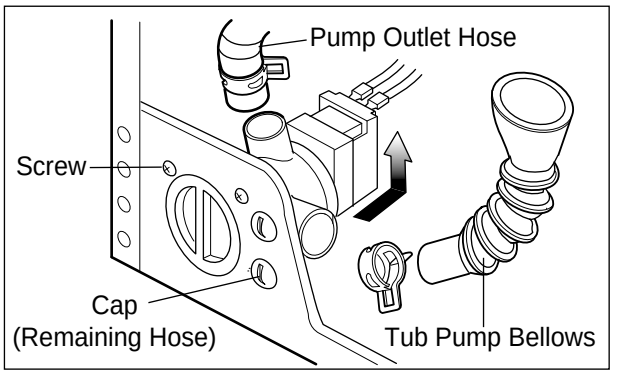


Unplug the drain plug (②) , then the water flows out,
At this time use a vessel to prevent water flowing on the floor. If the water does not flow any more,turn the pump filter (③) open to the left.



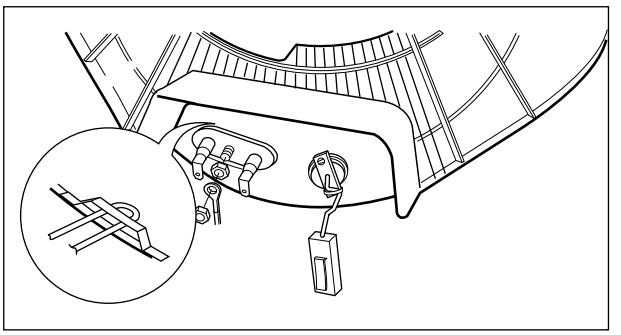
Take out any foreign material from the pump filter (③). After cleaning, turn the pump filter(③) clockwise and insert the drain plug (②)to the original place. close the lower cover cap.

PUMP



① Remove pump outlet hose.
② Remove tub pump bellows.
③ Remove cap (Remaining Hose.)
④ Disconnect the wiring.
⑤ Unscrew 2 screws.
⑥ Remove the pump.

HEATER

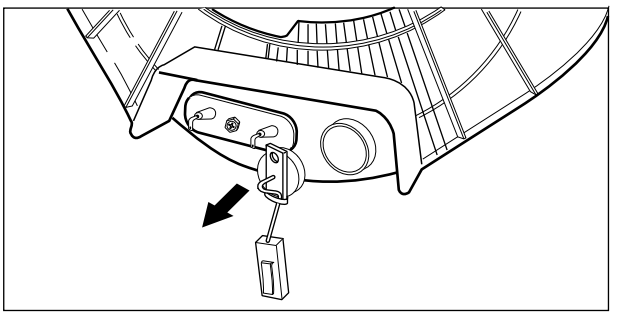


① Loosen the M6 heater nut to pull out the heater.

CAUTION

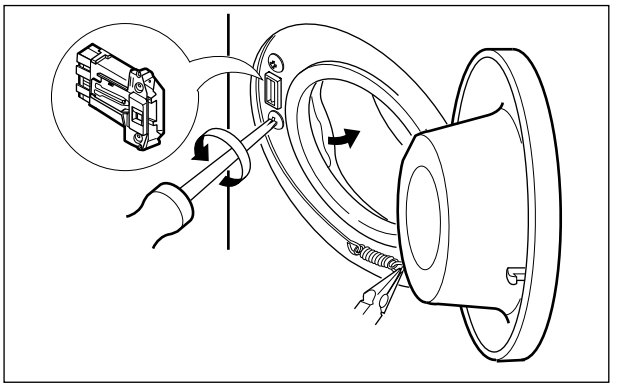
When mounting the heater, be sure to insert the heater into the heater clip on the bottom of the tub.

THERMISTOR



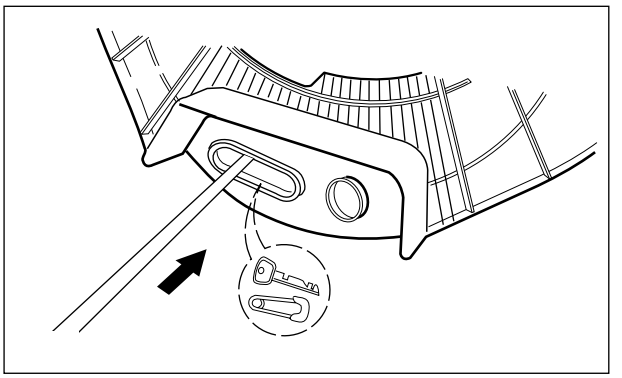
① Pull it out by holding the thermistor bracket.
* If it is pulled by the wire, it may be broken.
② When mounting the thermistor again, make sure that it is got back tight to the bushing.

SWITCH ASSEMBLY, DOOR LOCK



① Take apart the cabinet cover clamp and release the gasket.
② Unscrew 2 screws holding the door lock.
③ Disconnect the door lock from the wiring connector.

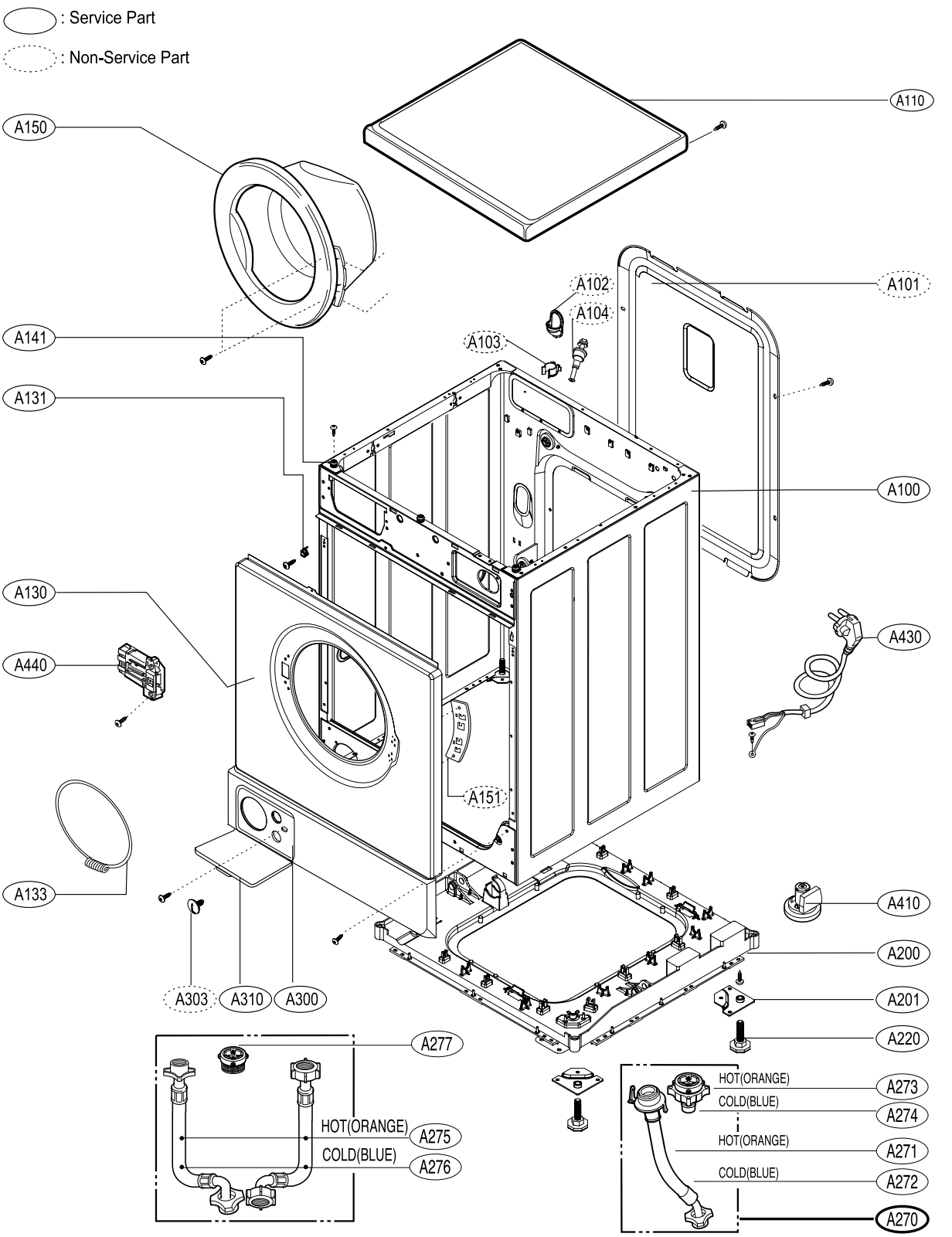
WHEN FOREIGN MATERIAL IS STUCK BETWEEN DRUM AND TUB



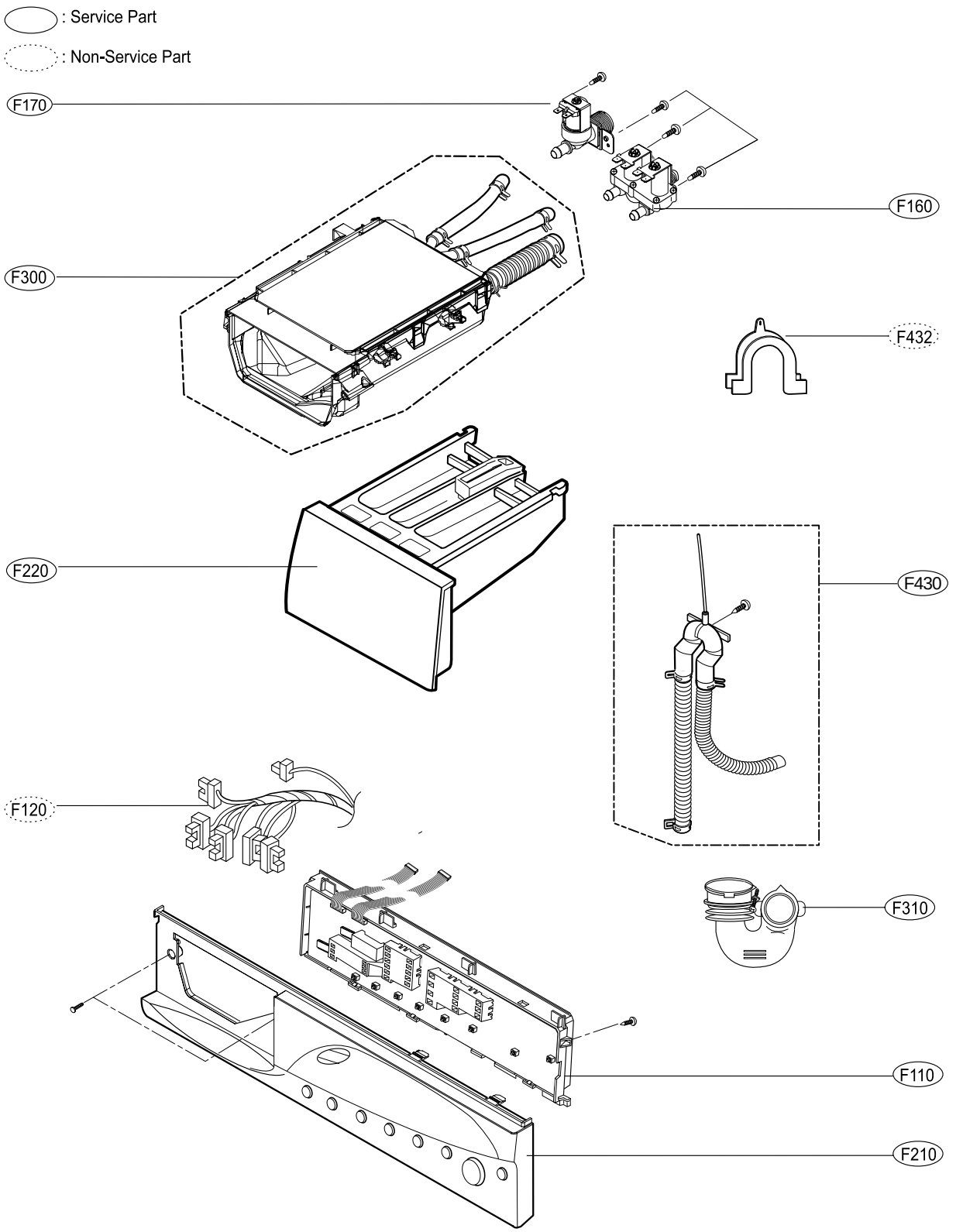
① Remove the heater.
② Remove the foreign material (wire, coin and others) by inserting a long bar through the hole.

10. EXPLODED VIEW

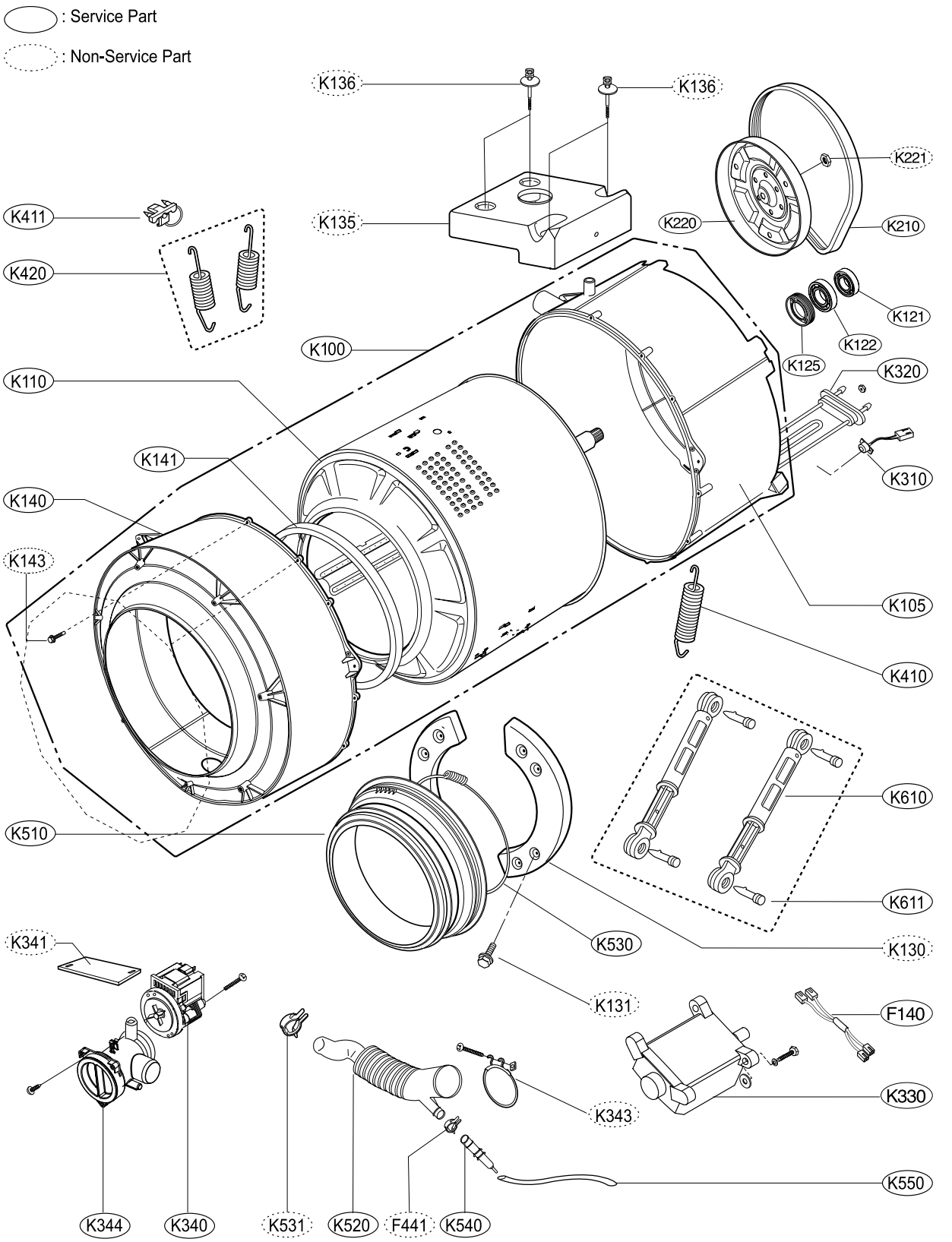
10-1.THE EXPLODED VIEW OF CABINET ASSEMBLY



10-2 THE EXPLODED VIEW OF CONTROL PANEL & DISPENSER ASSEMBLY



10-3 THE EXPLODED VIEW OF DRUM & TUB ASSEMBLY



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